

In the Claims:

Following is a complete listing of the claims pending in the application, as amended:

1. An expression vector for expressing a multimeric polypeptide anchored on a surface of a genetically replicable package formed by a host, the expression vector comprising:

a vector segment encoding a polypeptide sequence having;

- i. a first polypeptide segment,
- ii. a second polypeptide segment having therein a cleavable peptide sequence cleavable by a proteolytic agent, and,
- iii. a third polypeptide segment having therein an anchoring peptide sequence for anchoring said multimeric polypeptide to said surface of said genetically replicable package,

the second polypeptide segment being between the first polypeptide segment and the third segment,

whereby the cleavable peptide sequence is cleaved by the proteolytic agent and whereby the first segment associates with the third segment to form the multimeric polypeptide.

2. The expression vector of claim 1, wherein the first and third polypeptide segments comprise an amino acid sequence derived from antibody light and heavy chains.

3. The expression vector of claim 1, wherein the first and third polypeptide segments comprise the antigen binding regions of the variable domains of antibody light and heavy chains.

4. The expression vector of claim 1, wherein the first polypeptide segment comprises the variable domain and the constant domain of an antibody light chain, and the third polypeptide segment comprises the variable domain and a constant domain of the antibody heavy chain, such that when the first and third segments associate, the product is a Fab antibody fragment.

5. The expression vector of claim 1, wherein the first polypeptide segment comprises the variable domain and the CH1 domain of an antibody heavy chain, and the third polypeptide segment comprises the variable domain and the constant domain of the antibody light chain, such that when the first and third segments associate, the product is a Fab antibody fragment.

6. The expression vector of claim 1, wherein the first polypeptide segment comprises the variable domain and the constant domain of the antibody light chain, and the third polypeptide segment comprises the variable domain and the CH1 domain of an antibody heavy chain, such that when the first and third segments associate, the product is a Fab antibody fragment.

7. The expression vector of claim 1, wherein the first and third polypeptide segments comprise the variable domains of the light and heavy chains of a single

antibody such that when the first and third segments associate, the product is an Fv antibody fragment.

8. The expression vector of claim 1, wherein the first polypeptide segment is N-terminal to the second polypeptide segment, and wherein the second polypeptide segment is N-terminal to the third polypeptide segment, and wherein the vector segment encoding the third polypeptide segment further includes one or more suppressable nonsense codon(s) N-terminal to the anchoring segment.

9. The expression vector of claim 1, wherein the third polypeptide segment further includes a cleavable peptide sequence cleavable by a second proteolytic agent.

10. The expression vector of claim 9, wherein the first and second proteolytic agents are identical.

11. The expression vector of claim 1, wherein the proteolytic agent is selected from the group consisting of a chemical proteolytic agent and an enzymatic proteolytic agent.

12. The expression vector of claim 1, wherein the proteolytic agent is expressed by the host.

13. The expression vector of claim 1, wherein the proteolytic agent is added such that it contacts and cleaves the second polypeptide segment.

14. The expression vector of claim 11, wherein the chemical proteolytic agent is an acid.

15. The expression vector of claim 1, wherein the cleavable peptide sequence comprises the sequence represented by SEQ ID NO:1.

16. The expression vector of claim 1, wherein the cleavable peptide sequence is not found in either the first or third polypeptide segments, and is recognized as a protein cleavage site by a proteolytic agent encountered in the host.

17. The expression vector of claim 1, wherein the polypeptide sequence further comprises one or more leader sequence(s) positioned upstream of the first polypeptide segment or third polypeptide segment or both first and third polypeptide segments.

18. The expression vector of claim 1, wherein the anchoring peptide comprises a segment encoding a phage coat protein.

19. The expression vector of claim 1, wherein the expression vector is selected from the group consisting of plasmids, phages, cosmids, phagemids, and viral vectors.

20. The expression vector of claim 1, wherein the expression vector is selected from the group consisting of M13, f1, fd, If1, lke, Xf, Pf1, Pf3, λ , T4, T7, P2, P4, ϕ X-174, MS2 and f2.

21. The expression vector of claim 1, wherein the genetically replicable package is selected from the group consisting of a bacteriophage, a virus, a cell and a spore.

22. The expression vector of claim 21, wherein the cell is a bacterial cell.

23. The expression vector of claim 22, wherein the bacterial cell is selected from the group consisting of strains of *Escherichia coli*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Neisseria gonorrhoeae*, and *Bacillus subtilis*.

24. The expression vector of claim 21, wherein the cell is a yeast cell.

25. The expression vector of claim 1, wherein the genetically replicable package is a filamentous bacteriophage specific for *Escherichia coli* and the anchoring peptide is a phage coat protein selected from the group consisting of coat protein III, coat protein pVI and coat protein VIII.

26. The expression vector of claim 25, wherein the filamentous bacteriophage is selected from the group consisting of M13 and fd.

27. The expression vector of claim 1, wherein the proteolytic agent is encoded by a nucleic acid sequence in the expression vector.

28. The expression vector of claim 1, wherein the proteolytic agent is encoded by a nucleic acid sequence in a second expression vector.

29. The expression vector of claim 1, wherein the cleavable peptide sequence comprises a disordered region cleavable by the proteolytic agent.

30. The expression vector of claim 1, wherein the cleavable peptide sequence comprises a specific peptide cleavage site cleavable by the proteolytic agent.

31. The expression vector of claim 1, wherein the cleavable peptide sequence includes a cleavage site for urokinase, pro-urokinase, thrombin, enterokinase, plasmin, plasminogen, TGF- β , staphylokinase, thrombin, Factor IXa, Factor Xa, a metalloproteinase, an interstitial collagenase, a gelatinase or a stromelysin.

32. The expression vector of claim 1, wherein the cleavable peptide sequence is cleavable by a protease selected from the group consisting of degP, degQ, degS and tsp.

33. The expression vector of claim 1, wherein the cleavable peptide sequence comprises a self-cleaving domain.

34. The expression vector of claim 33, wherein the self-cleaving domain is derived from an intein.

35. A host cell comprising the expression vector of claim 1.

36. The host cell of claim 35, wherein the proteolytic agent is a native proteolytic agent.

37. The host cell of claim 35, wherein the proteolytic agent is localized in the periplasm.

38. The host cell of claim 35, wherein the proteolytic agent is localized in the cytoplasm.

39. A method of producing a multi-subunit protein, comprising

transforming a host cell with the expression vector of claim 1, and

displaying the multi-subunit protein encoded by the vector onto the surface of the genetically replicable package.

40. The method of claim 39, wherein the vector comprises nucleotide sequences encoding functional portions of heterodimeric receptors selected from the group consisting of antibodies, T cell receptors, integrins, hormone receptors and transmitter receptors.

41 – 81 (Cancelled).